

REMARKS

Claims 1, 8, 11, 17 and 18 have been amended. Reexamination and reconsideration are respectfully requested.

In the Office Action, independent claims 1, 8, 11, 17 and 18 were rejected as obvious over SAKAMOTO et al. (US 6,396,229) in view of TAUCHI et al. (US 6,328,136). Applicants respectfully traverse this rejection in view of the following remarks and the remarks submitted in the prior replies to the Office Action, the contents of which are incorporated by reference.

As recited in independent claims 1 and 8, Applicants' invention provides a controller for a mobile body that includes a rotor position estimator (for example 301 shown in Fig. 1) and a mobile body position estimator. The rotor position estimator estimates a magnetic pole position of a rotor of a synchronous motor that drives the mobile body, via a drive unit, based on electrical quantities in relation to electric power supplied to the synchronous motor. The mobile body position estimator estimates the position of the mobile body based on the magnetic pole position estimated by the rotor position estimator, for example 301.

Applicants' mobile body position estimator thus does not estimate the position of the mobile body directly, but rather estimates it based on the magnetic pole position, which itself was estimated by the rotor position estimator based on electrical quantities in relation to the electric power supplied to the

synchronous motor. Neither SAKAMOTO nor TAUCHI disclose or suggest such features, whether taken alone or in combination.

As the Examiner acknowledged in the Office Action, SAKAMOTO does not disclose controlling a mobile body via a mobile body position estimator (see page 3, lines 3-4). The Examiner goes on, however, to argue that TAUCHI discloses a mobile body position estimator which estimates the position of a mobile body based on the magnetic pole position estimated by said rotor position estimator, citing to col. 4, line 66 - col. 5, line 7 and col. 11, line 29 - col. 12, line 42 of TAUCHI (see Office Action page 3, lines 5-8). Applicants respectfully submit this is not correct as TAUCHI does not disclose a mobile body position estimator as recited in Applicants' claims, since TAUCHI does not estimate any "mobile body" as in Applicants' invention.

Applicants have clarified each of independent claims 1, 8, 11, 17 and 18 to make clear that the "mobile body" whose position is estimated based on the magnetic pole position estimated by the rotor position estimator is completely different from the drive unit for the mobile body, which is powered via the synchronous motor.

By contrast, TAUCHI et al. describes a drive machine with a drive sheave position detector. TAUCHI makes clear that his drive sheave 16 is constituted by the rotor 12, which includes a field permanent magnet 14 to form the drive machine or synchronous motor (see col. 1, line 62 - col. 2, line 9, as well as col. 4, lines 63-67). In that regard, even the passage cited by the Examiner – col. 4, line

66 - col. 5, line 7 – at best discloses only the rotor position estimator. It does not, however, either teach or suggest a mobile body position estimator which estimates the position of the mobile body as in Applicants' claims.

In that regard, referring to Applicants' Figures 1 and 2, Applicants "sheave 501" likewise functions as the drive unit for driving the "elevator car 401", which elevator car is Applicants' claimed mobile body. Clearly, the sheave 501 is thus not a mobile body, but rather is part of the drive for the motor 1.

Even a combination of SAKAMOTO in view of TAUCHI still does not arrive at Applicants' claimed invention, and as noted below is improper. If, for example, the "rotor 12" shown in TAUCHI et al. corresponds to Applicants' claimed "mobile body", then, when combining it with SAKAMOTO et al., the magnetic pole position 14 or the machined-out portions 30 of the rotor 12 may be estimated. However, this still does not allow for an estimation of the position of the elevator car 2 (see Fig. 11 of TAUCHI et al.) which is driven by the rotor 12.

In Applicants' invention, on the other hand, the mobile body is driven by the synchronous motor via a drive unit. Therefore, rotation of the synchronous motor is converted to a vertical direction motion (see Figs. 1 and 2, for example), a horizontal direction motion (see Fig. 3, for example), or a diagonal direction motion (see Fig. 4, for example), via the drive unit. Therefore, Applicants' claimed "mobile body position estimator" which estimates "the position of the mobile body" refers to an estimation of the position in multiple directions.

As this would be understood by those of skill in the art, it is readily apparent that Applicants' claimed invention is quite different from TAUCHI et al., whether or not combined with SAKAMOTO et al. Hence, Applicants submit independent claims 1, 8, 11, 17 and 18 are patentable over this combination. The remaining claims depend therefrom and are also submitted to be patentable.

For the foregoing reasons, Applicants submit claims 1-22 are in condition for allowance. An early notice to that effect is solicited.

Summarizing, Applicants have made an important contribution to the art to which the present subject matter pertains, for which no counterpart is shown in any of the art or combination of same. The invention is fully set forth and carefully delimited in all claims in this case. Under the patent statute, Applicants should not be deprived of the protection to which they are entitled for this contribution. Accordingly, it is respectfully requested that favorable reconsideration and an early notice of allowance be provided for all remaining claims.

If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.


If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and

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please charge any deficiency in fees or credit any overpayments to Deposit
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Respectfully submitted,

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